



United States  
Department of  
Agriculture

Forest  
Service

Warner Mountain  
Ranger  
District

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File Code: 3411  
Route To:

Lat 41.91551 Lon -120.24778

Date: July 29, 1999

Subject: Forest Pest Surveillance

To: Forest Supervisor, Modoc NF

A recent aerial survey of the Warner Mountains revealed no new centers of unacceptable conifer mortality. During the past ten years, most of annual flights discovered new areas of mortality associated with below average precipitation levels. However, flights in 1998 and 1999 indicate conifer mortality in the Warner Mountains has declined to an endemic level.

This year's flight disclosed several areas where insects are actively feeding on white fir foliage. Field exams indicate damage is confined to the loss of the current year's needles. Stands will be monitored to track the magnitude of the area affected and the impacts to conifers.

White fir continues to be the most obvious species succumbing to environmental stress. Recent above-average precipitation levels have halted widespread conifer die-off, however, white fir still exhibit signs of individual tree stress. Throughout the northern part of the District, Modoc budworm is expanding its range from that which was observed in 1998. The areas most notably affected are North Star Basin, the Mill Creek and Cottonwood watersheds, and a large area surrounding Del Pratt Springs. Damage is presently limited to the consumption of the new foliage on white fir. Approximately 50 percent of the trees in most stands have signs of feeding in the top four feet of the tree as well as the terminal growth on all lateral branches. The District will continue to monitor the impacts of Modoc budworm during the 2000 growing season.

Outbreaks of budworms tend to be associated with late successional and climax plant communities in the white fir type. During the past 20 years frequent budworm outbreaks have been observed in the Warner Mountains. Complete defoliation of trees is rare, but any defoliation contributes to tree stress. Intertree competition is intensified in these types of stands, and moisture stress is accentuated because white fir is less tolerant to drought than pines. Periodic declines in annual precipitation may induce pulses of widespread fir mortality in the Warner Mountains.

Quaking aspen also exhibit symptoms of insect and disease activity. Some clones appear to have considerable foliage removed by feeding insects. The specific insect or complex has yet to be determined. Small stands affected by defoliation are randomly distributed across the District. Surrounding clones appear unaffected. Mapping affected stands is extremely difficult as the conditions appears to be present throughout the District in large and small stands, many too small to mapped aerially. The exact implication to resource management is yet unknown. Consultation with entomologists and pathologists is needed to determine the long-term significance of aspen defoliators.

Most stands of quaking aspen also exhibit signs of false tinder fungus. The disease is a heart rot that causes more loss than any other wood destroyer of hardwoods. The widespread occurrence



of the disease also negates attempts to map its location, as it occurs in most stands of mature trees. In many stands, false tinder fungus appears to be a chronic problem for many years until the host trees die and the clone eventually disappears.

The District will be flown again in FY 2000 to assess insect and disease activity. Additional attention will be focussed on specific areas where Modoc budworm is active. Those areas are shown on the attached maps



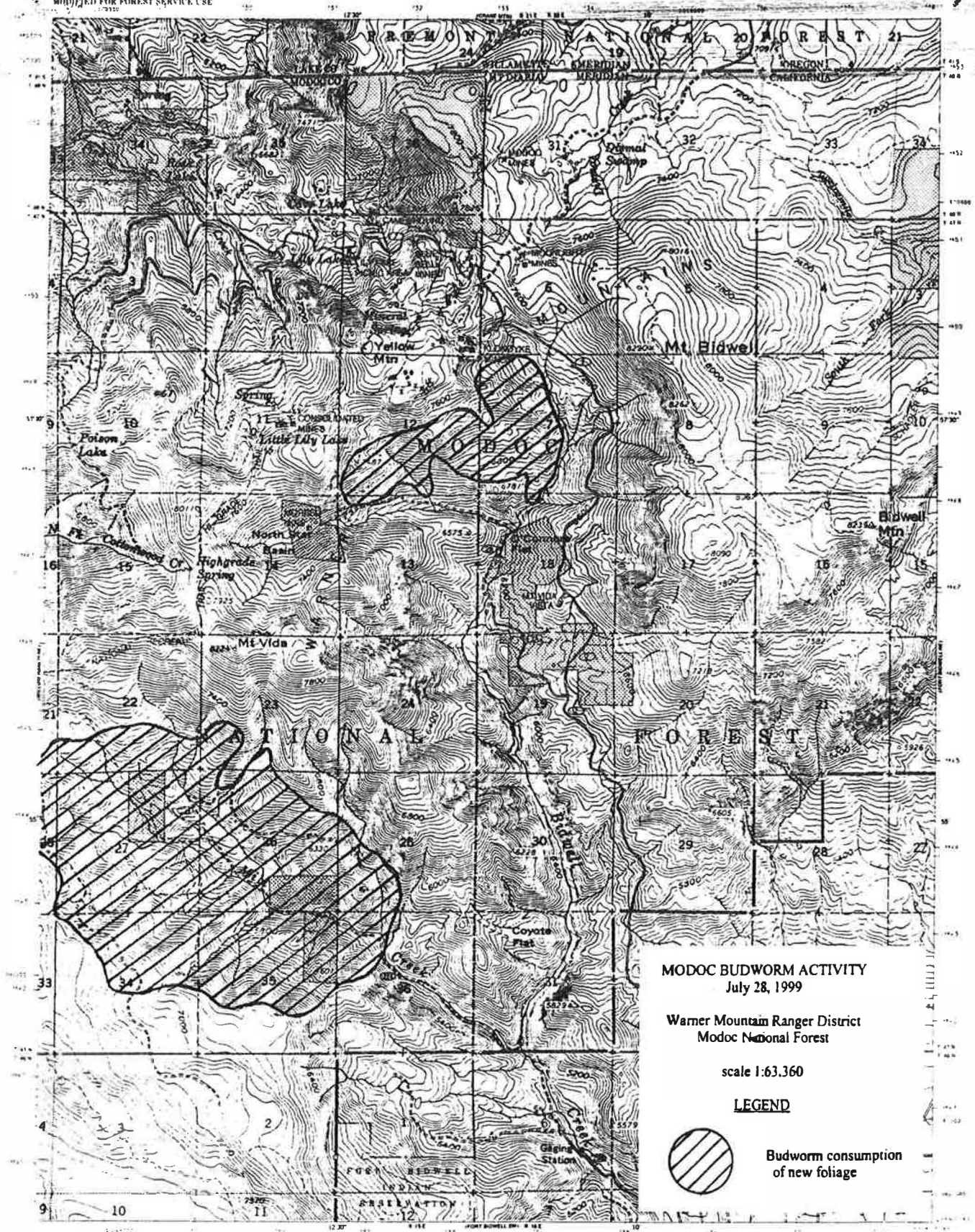
for

EDITH S. ASROW  
District Ranger

attachments (2)

cc: B. Woodruff Lassen NF

cc: B. Merrihew

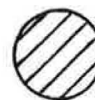


**MODOC BUDWORM ACTIVITY**  
July 28, 1999

Warner Mountain Ranger District  
Modoc National Forest

scale 1:63,360

**LEGEND**



Budworm consumption  
of new foliage

Base map prepared to the USGS  
Polyconic projection 1927 North American datum  
10,000 foot grid suitable for California coordinate system  
zone 10  
1000 meter Universal Transverse Mercator grid, zone 10

INTERMEDIATE EDITION  
Modification to USGS base map by Geomatrix Service  
Center from 1975 USGS orthophotos and 1981 correction  
guides furnished by the Pacific Southwest Region



National Forest Boundary  
Non-Forest Service land within  
Protected Boundary as of 1982  
TOWNSHIP AND SECTION LINE CLASSIFICATION  
Surveyed Location Approximate  
Unsurveyed Location Approximate

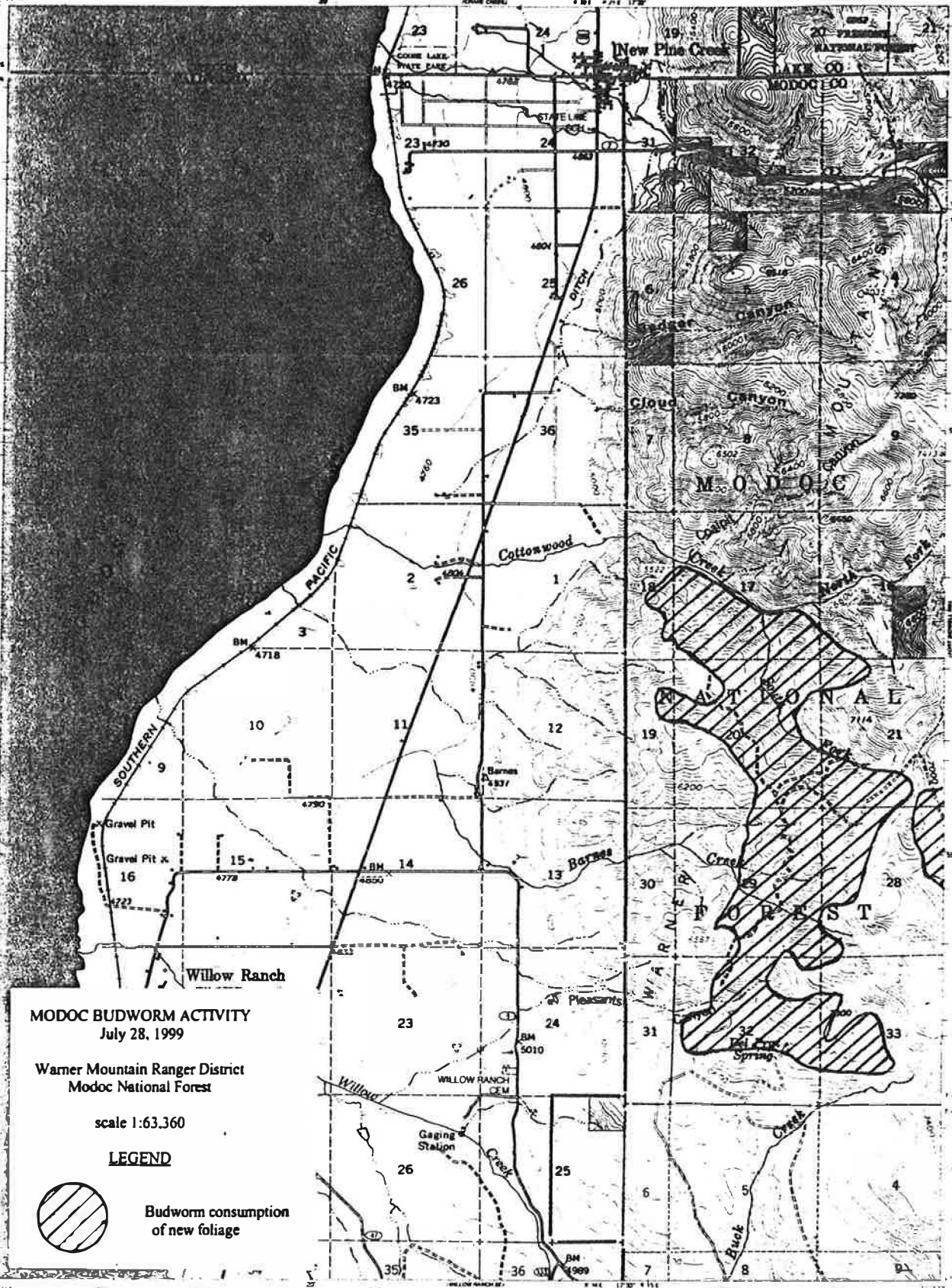
CONTOUR INTERVAL 40 FEET  
DATUM IS MEAN SEA LEVEL

LEGEND  
Primary Highway  
Secondary Highway  
Improved Light Duty  
Unimproved Dirt  
Trail  
Approximate Road  
Approximate Trail

US Highway  
State Highway  
County Road  
Forest Highway  
Forest Road  
Forest Trail



MODOC NATIONAL FOREST



Base map provided by the USGS  
Topographic map, 1973 North American datum  
10 000 foot grid based on California coordinate system  
Field 1  
10000 meter Universal Transverse Mercator 874, zone 10

INTERMEDIATE EDITION

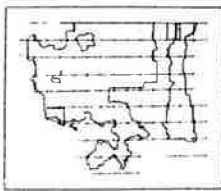
Modification to USGS base map by Geographic Names  
Center from 1971 USGS map and 1981 USGS  
quadrangle survey by the Pacific Southwest Region

- National Forest Boundary
- Warner Mountain Ranger District Boundary
- Private Land Boundary
- Modoc National Forest Boundary
- Warner Mountain Ranger District Boundary
- Private Land Boundary
- Warner Mountain Ranger District Boundary
- Private Land Boundary

CONTOUR INTERVAL 40 FEET  
DATUM IS MEAN SEA LEVEL

- Primary Highway
- Secondary Highway
- Improved Light Duty
- Unimproved Road
- Trail
- Approximate Road
- Approximate Trail

- US Highway
- State Highway
- County Road
- Forest Road
- Private Road
- Private Trail



WILLOW RANCH NE  
7.5 MINUTE SECTION  
725-1C